

Remarks

Claims 19 and 20 have been amended with the details set forth in Attachment I (Version with Markings to Show Changes Made).

The 35 USC 112 Rejections

Claim 26 is newly rejected under 35 USC 112, first paragraph, because there is no description in the specification that "barium metal oxide" has a low work function of approximately 1eV. True, the specification does not specifically state that barium metal oxide has a work function of about "1eV". However, a reading of page 2, lines 1_5, page 4, lines 2-9, and page 5, line 22 to line 2 of page 6, and the Handbook of Thermionic Properties (see page 71) referenced on page 2 of the specification, which shows "BaO" as having a work function of "0.99eV". Thus, it is submitted that the Examiner is hard pressed to contend that there is no teaching that this material has a low work function "(~1eV)" as set forth on page 2 lines 1-7 of Applicants' specification. It is thus submitted that there is no basis for this rejection and such should be withdrawn.

The 35 USC 103 Rejections

Claims 19, 21, 22, 24-27, 29 and 30 are rejected under 35 USC 103(a) as being unpatentable over Russo in view of Chrissey and Gartner I and in further view of any one of Face, Koga, Gartner II or Mehrotra. Parent Claim 19 has been amended to set forth the "means for processing the surface of the substrate", previously recited in Claim 20. None of these seven(7) applied references teach or suggest this feature. Thus, this ground of rejection is deemed to be overcome and should be withdrawn.

Claims 23 and 24 are rejected under 35 USC 103(a) as "unpatentable over the references cited in the rejection of Claim 19" taken in further view of Cotell.

With the above referenced amendment to parent Claim 19, not of the eight(8) applied references teach or suggest the features now set forth in these claims which include the amended subject matter of Claim 19. Thus, this rejection should be withdrawn.

Claims 20 and 28 are rejected under 35 USC 103(a) as "unpatentable over the references cited in the rejection of Claim 19", taken in further view of Moto, Cotell and Face, "for the reasons stated in the previous office action". The previous Office Action mailed 9/24/01 discusses the teachings of these ten(10) applied references on pages 5 and 6. While the Examiner states that "Cotell discloses ion beam means for processing the surface of a substrate", Applicants are unable to locate that specific teaching. Further, here is an example of picking and choosing teachings from ten(10) references in an effort to establish a rejection of Applicants' claims, and without giving full consideration to the overall result of combining nine(9) references to modify the apparatus of Russo et al. If the features from the nine(9) references could be incorporated into the apparatus of Russo et al, such would render the apparatus of Russo et al inoperative for its intended purpose. It is well established in patent case law that such reconstruction of the primary reference, so as to render it inoperative for its intended purpose is impermissible under 35 USC 103. Further, where but by hindsight, having Applicants' disclosure as a teaching, is there any teaching or suggestion by these none(9) references, when taken as a whole, to modify the apparatus of Russo et al as proposed by the Examiner. It is submitted that the rejection of Claims 20 and 28 is improper and should be withdrawn.

Conclusion

In view of the amendments to the claims and the foregoing comments, it is submitted that each ground of rejection has been overcome, and that this application is in condition for allowance based on Claims 19-30. Should the Examiner hold that the

amendments fail to condition the application for allowance, entry, thereof for appeal purposes is requested since the amendments raise no new issues or require further search.

Respectfully submitted,

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Enclosure:
Attachment I



Attachment I
S. N. 09/636,134
Version with Markings to Show Changes Made

In The Claims

Claims 19 and 20 have been amended to read as follows:

19. (Thrice Amended) An apparatus for depositing a material having a work function of approximately 1eV on a substrate by laser ablation using short-wavelength photons, including:

a deposition chamber,

a target containing a material having a work function of approximately 1eV in said chamber,

a laser capable of directing photons at or below visible wavelength into said chamber and onto said target,

means for rotating said target,

means for controlling the composition of the deposit by controlling at least one of the groups consisting of the environment of said deposition chamber, the target composition, and the target temperature.

a substrate located in said chamber,

means for holding said substrate, [and]

means for [at least] rotating and tilting said substrate[.], and

means for processing the surface of the substrate.

20. (Amended) The apparatus of Claim 19, additionally including means for heating[,], and cooling [,and tilting] said substrate [, and means for processing the surface of the substrate].